T19 & Trillingen

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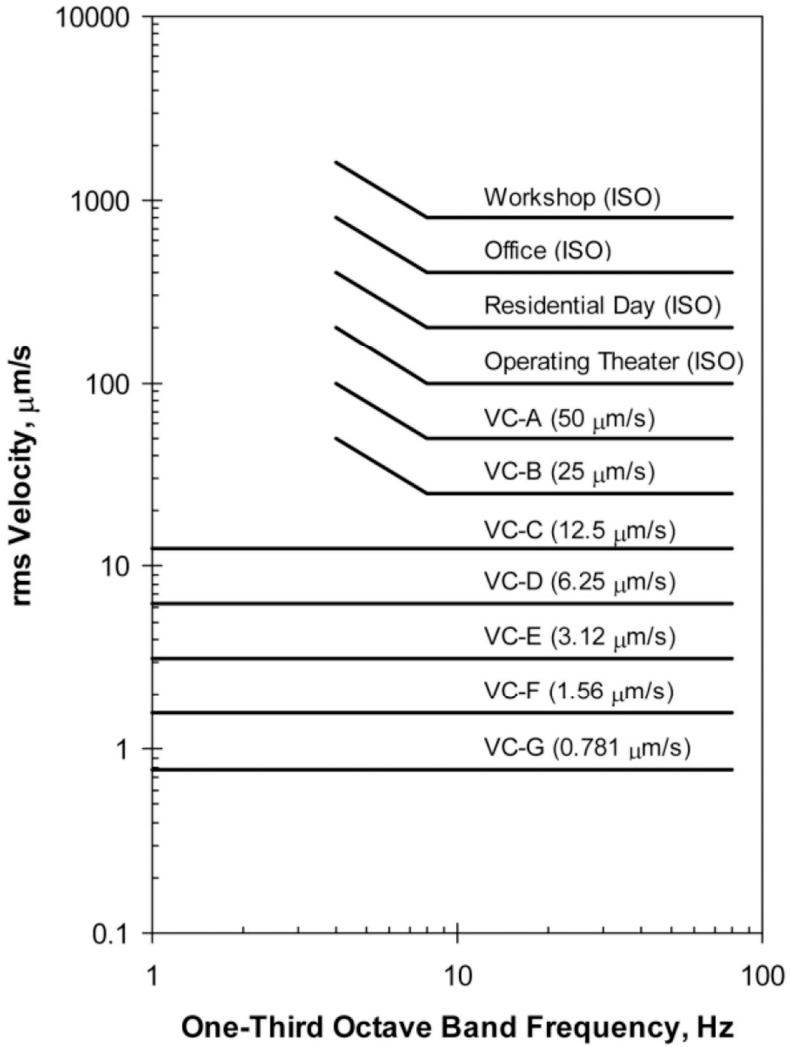
Heraanleg T19 | Railforum | 21 juni 2023

Trillingen: eis

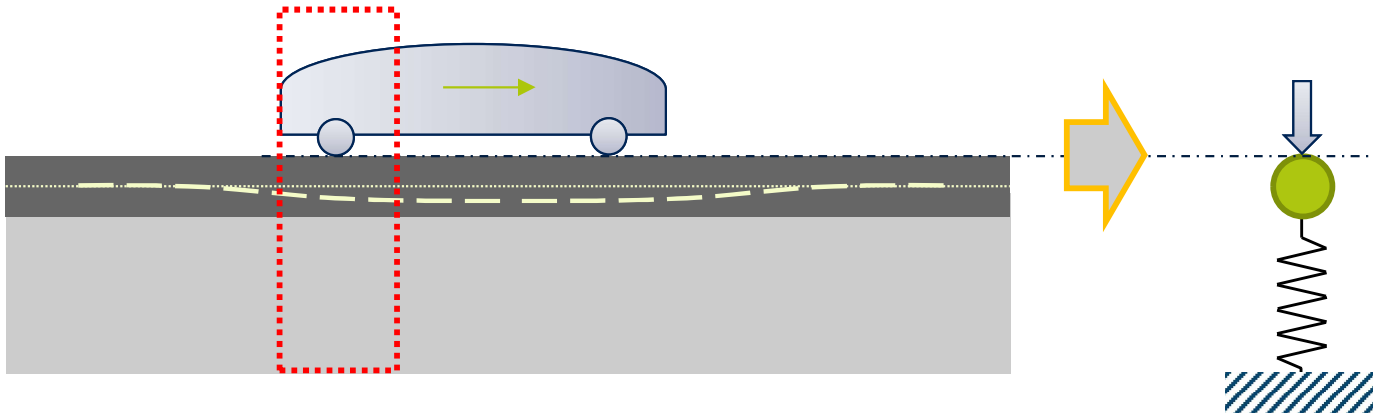


Trillingen: eis

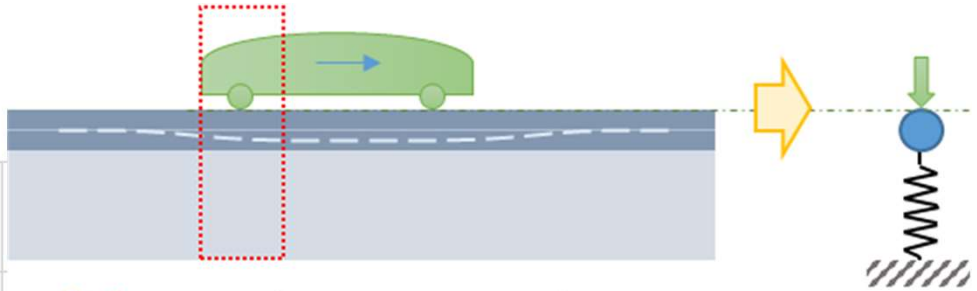
Curve Criterion	Velocity1 µm/s (µin/s)	Detail Size2 µm	Description of Use
Workshop (ISO)	800(32,000)	N/A	Distinctly perceptible vibration. Appropriate to workshops and non-sensitive areas.
Office (ISO)	400 (16,000)	N/A	Perceptible vibration. Appropriate to offices and non-sensitive areas
Residential Day (ISO)	200 (8000)	75	Barely perceptible vibration. Appropriate to sleep areas in most instances. Usually adequate for computer equipment, hospital recovery rooms, semiconductor probe test equipment and microscopes less than 40x.
Op. Theatre (ISO)	100 (4000)	25	Vibration not perceptible. Suitable in most instances for surgical suites, microscopes to 100X and for other equipment of low sensitivity.
VC-A	50 (2000)	8	Adequate in most instances for optical microscopes to 400X, microbalances, optical balances, proximity and projection aligners, etc.
VC-B	25 (1000)	3	Appropriate for inspection and lithography (including steppers) to 3 µm line widths..
VC-C	12.5 (500)	1 - 3	Appropriate standard for optical microscopes to 1000X, inspection and lithography inspection equipment (including moderately sensitive electron microscopes) to 1 µm detail size, TFT-LCD stepper/scanner processes.
VC-D	6.25 (250)	0.1 - 0.3	Suitable in most instances for the most demanding equipment including electron microscopes (TEMs and SEMs) and E-Beam systems..
VC-E	3.12 (125)	< 0.1	**A challenging criterion to achieve. Assumed to be adequate for the most demanding of sensitive systems including long path, laser-based, small target systems, E-Beam lithography systems working at nanometer scales, and other systems requiring extraordinary dynamic stability.**
VC-F	1.56 (62.5)	N/A	Appropriate for extremely quiet research spaces; generally difficult to achieve in most instances, especially cleanrooms. **Not recommended for use as a design criterion, only for evaluation.**
VC-G	.78 (31.3)	N/A	Appropriate for extremely quiet research spaces; generally difficult to achieve in most instances, especially cleanrooms. Not recommended for use as a design criterion, only for evaluation.

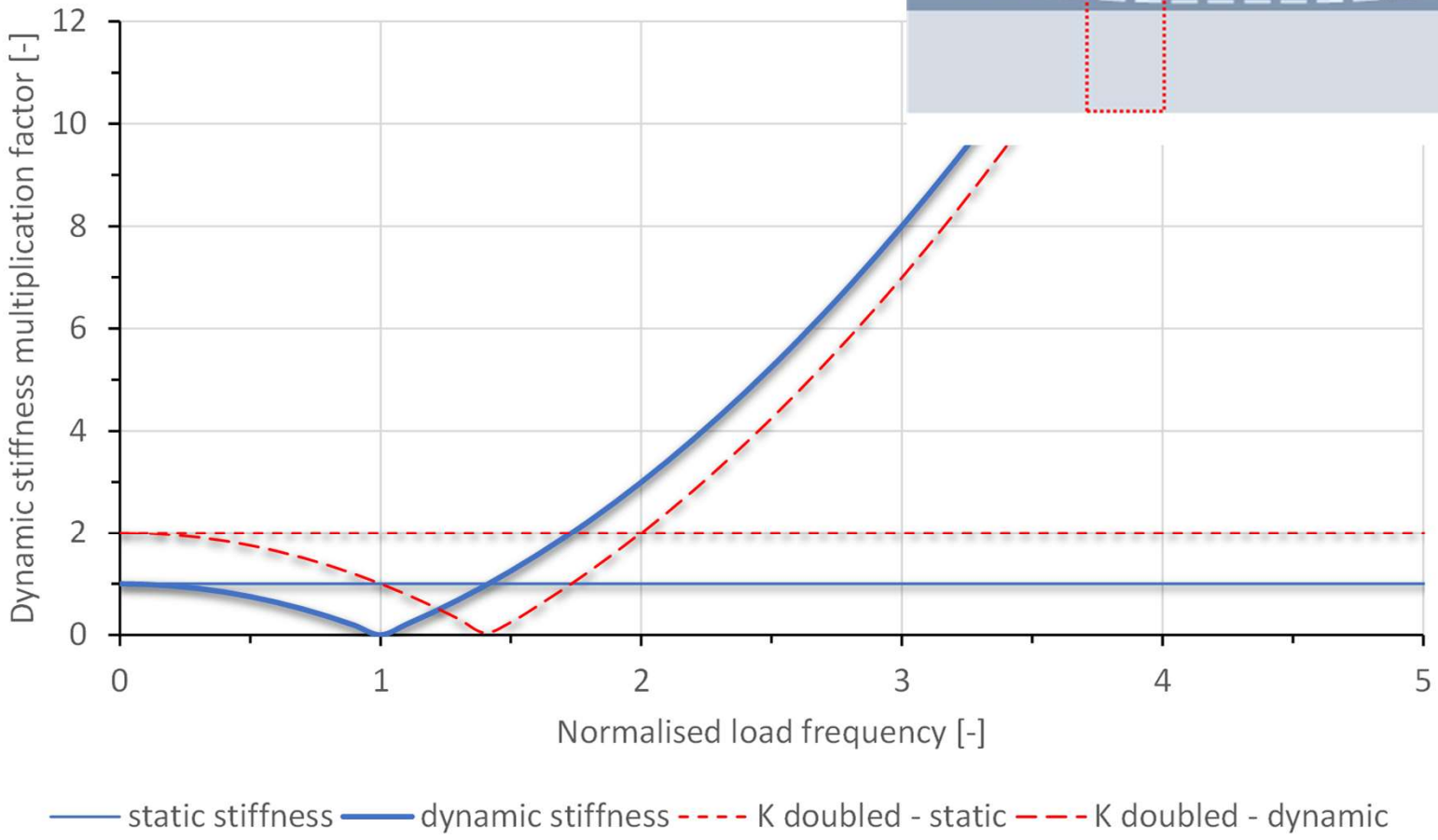
Uitdaging: VC-E ontwerpen?

- Trillingsbronnen lightrail: aspassage, aanzet-/rem-/boogkrachten, vlakke plaatsen….
- Infra: verstijven?

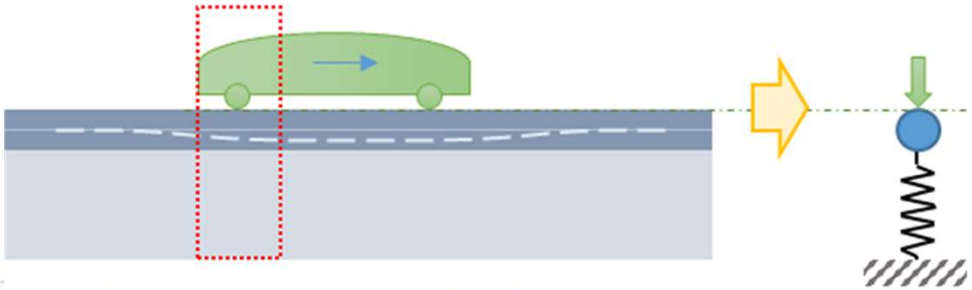


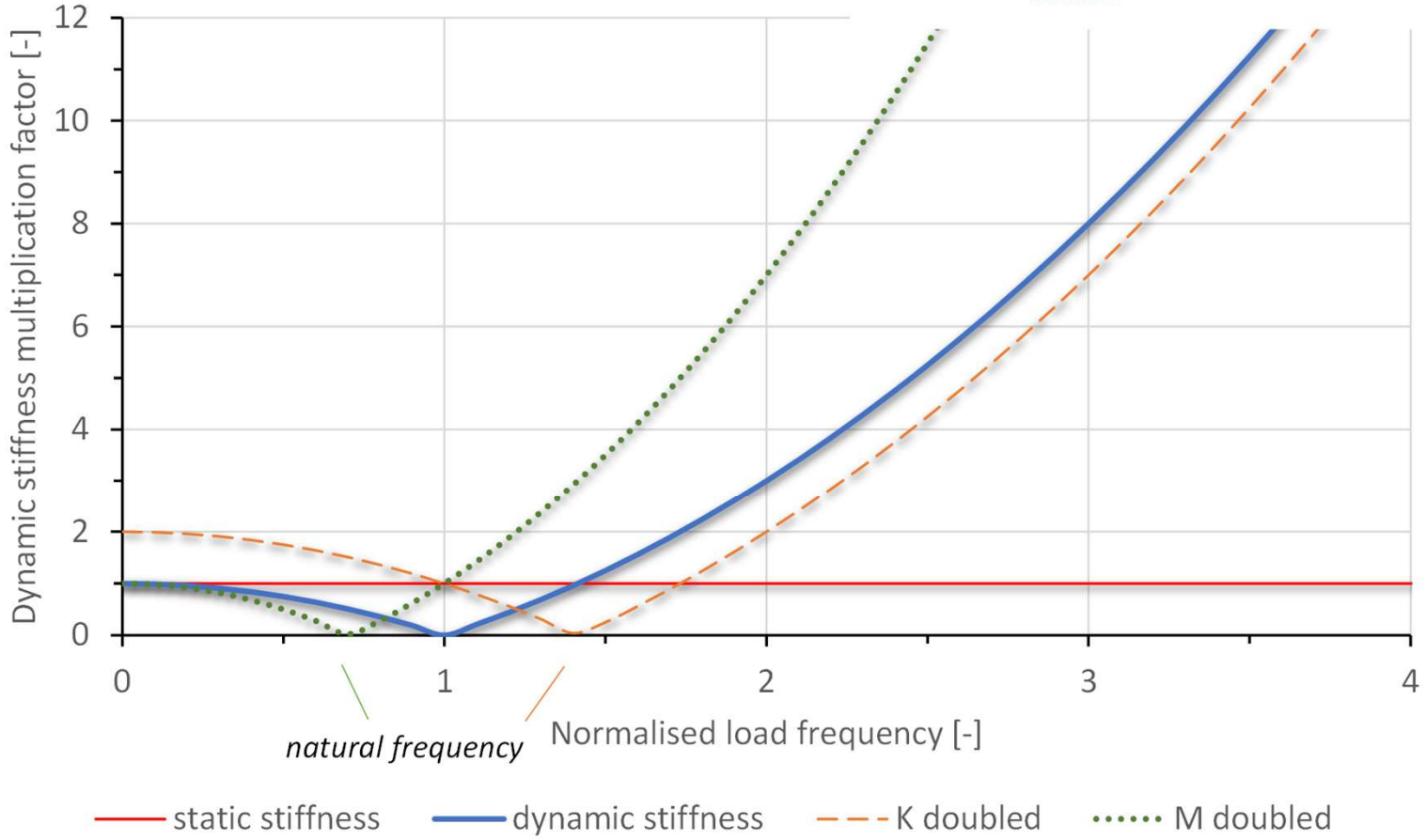
Stijvere constructie



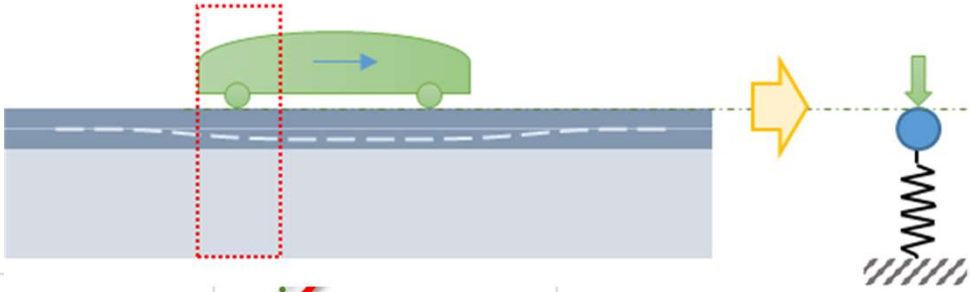


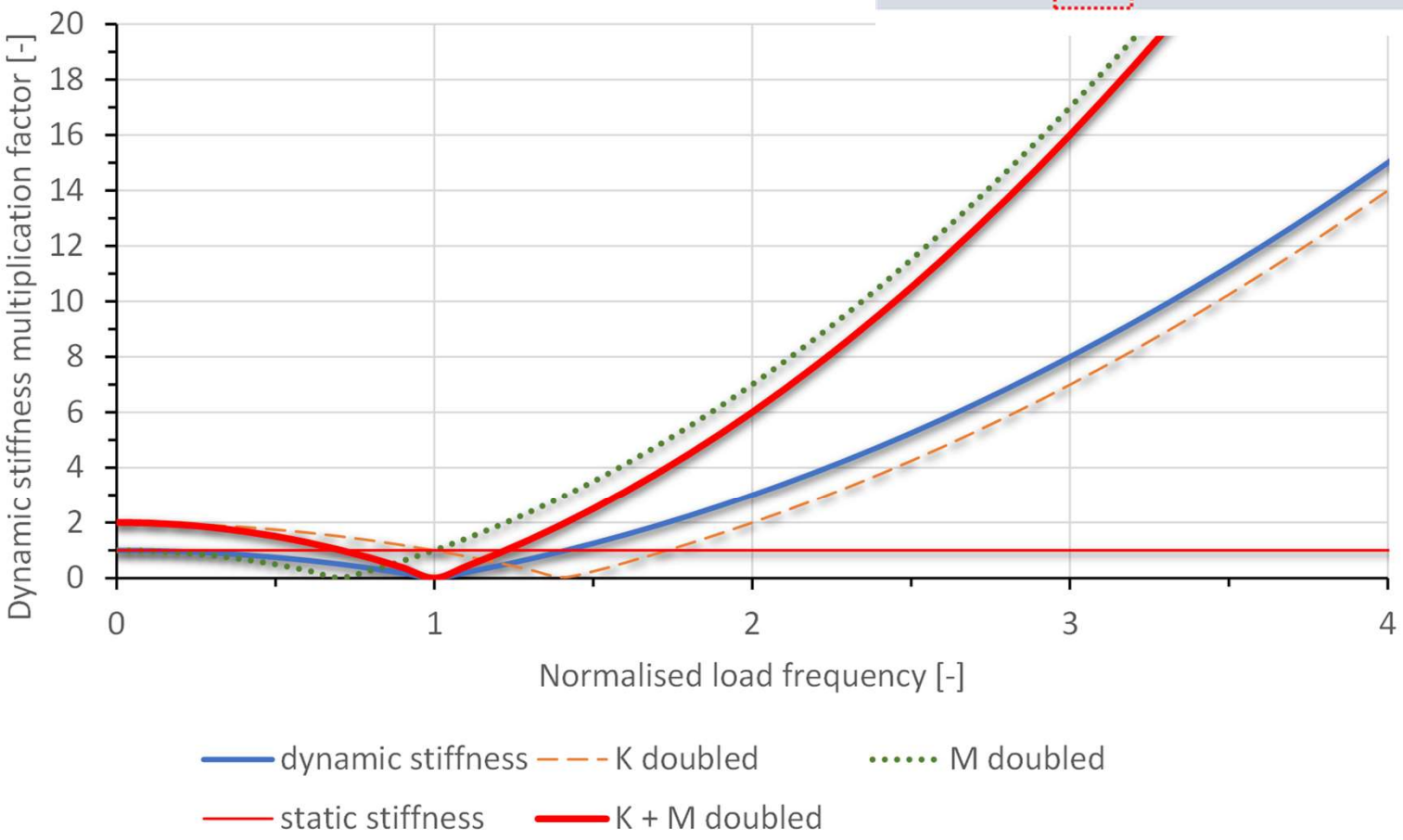
Zwaardere constructie



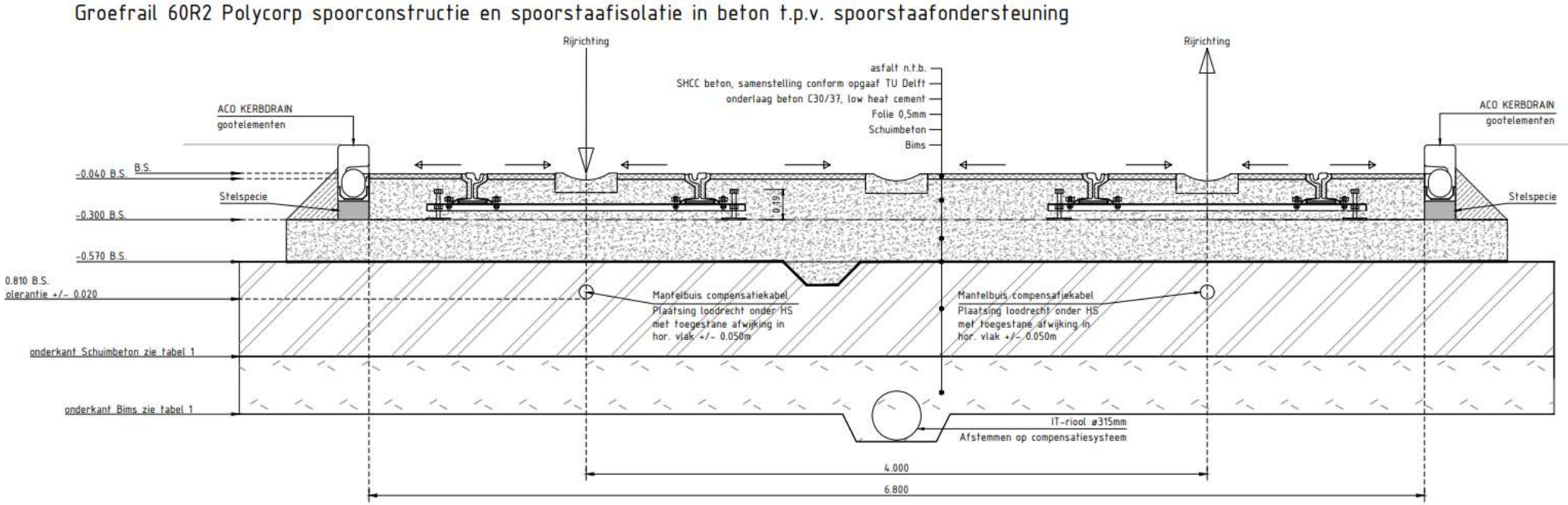


Stijfheid + massa erbij





Vertaling


Groefrail 60R2 Polycorp spoorconstructie en spoorstaafisolatie in beton t.p.v. spoorstaafondersteuning
Rijrichting
Rijrichting
asfalt n.t.b.
SHCC beton, samenstelling conform opgaaf TU Delft
onderlaag beton C30/37, low heat cement
Folie 0,5mm
Schuimbeton
Bims
ACO KERBDRAIN
gootelementen
ACO KERBDRAIN
gootelementen
-0.040 B.S.
B.S.
Stelspecie
Stelspecie
-0.300 B.S.
-0.570 B.S.
0.810 B.S.
olerantie +/- 0.020
0.19
Mantelbuis compensatiekabel
Plaatsing loodrecht onder HS
met toegestane afwijking in
hor. vlak +/- 0.050m
Mantelbuis compensatiekabel
Plaatsing loodrecht onder HS
met toegestane afwijking in
hor. vlak +/- 0.050m
onderkant Schuimbeton zie tabel 1
onderkant Bims zie tabel 1
IT-riool ø315mm
Afstemmen op compensatiesysteem
4.000
6.800

Aandachtspunten uitwerking

- Lengte baansecties: scheurinleiders, dilataties
- Aansluiting secties: controle vrijheidsgraden
- Verticaal: lagen uitvoering constructief samenwerkend

Rail: Polycorp